

Resistances for Various Membranes at 80 °C

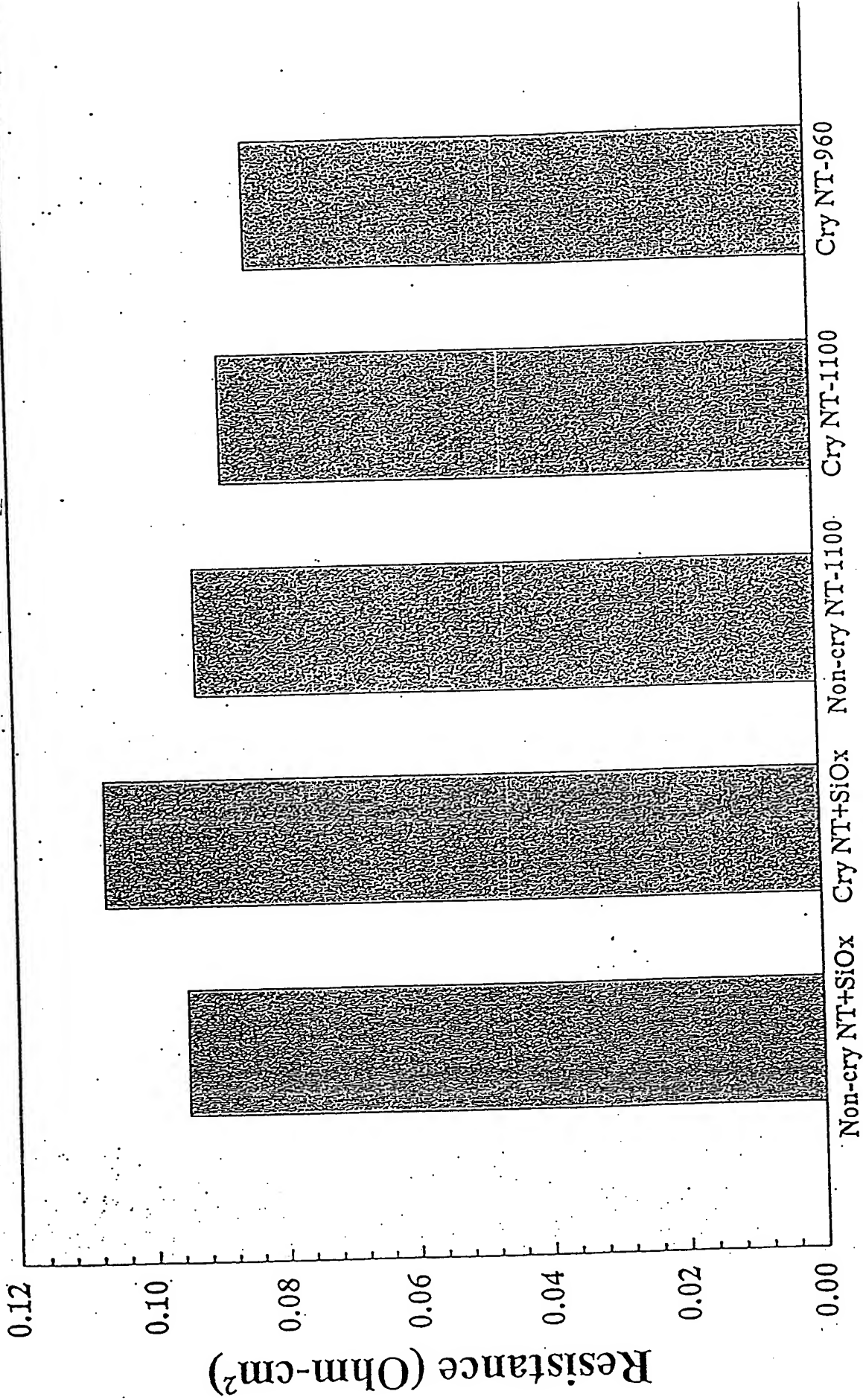


Fig. 1

Hydrogen Crossover for Different Membranes at 60 °C

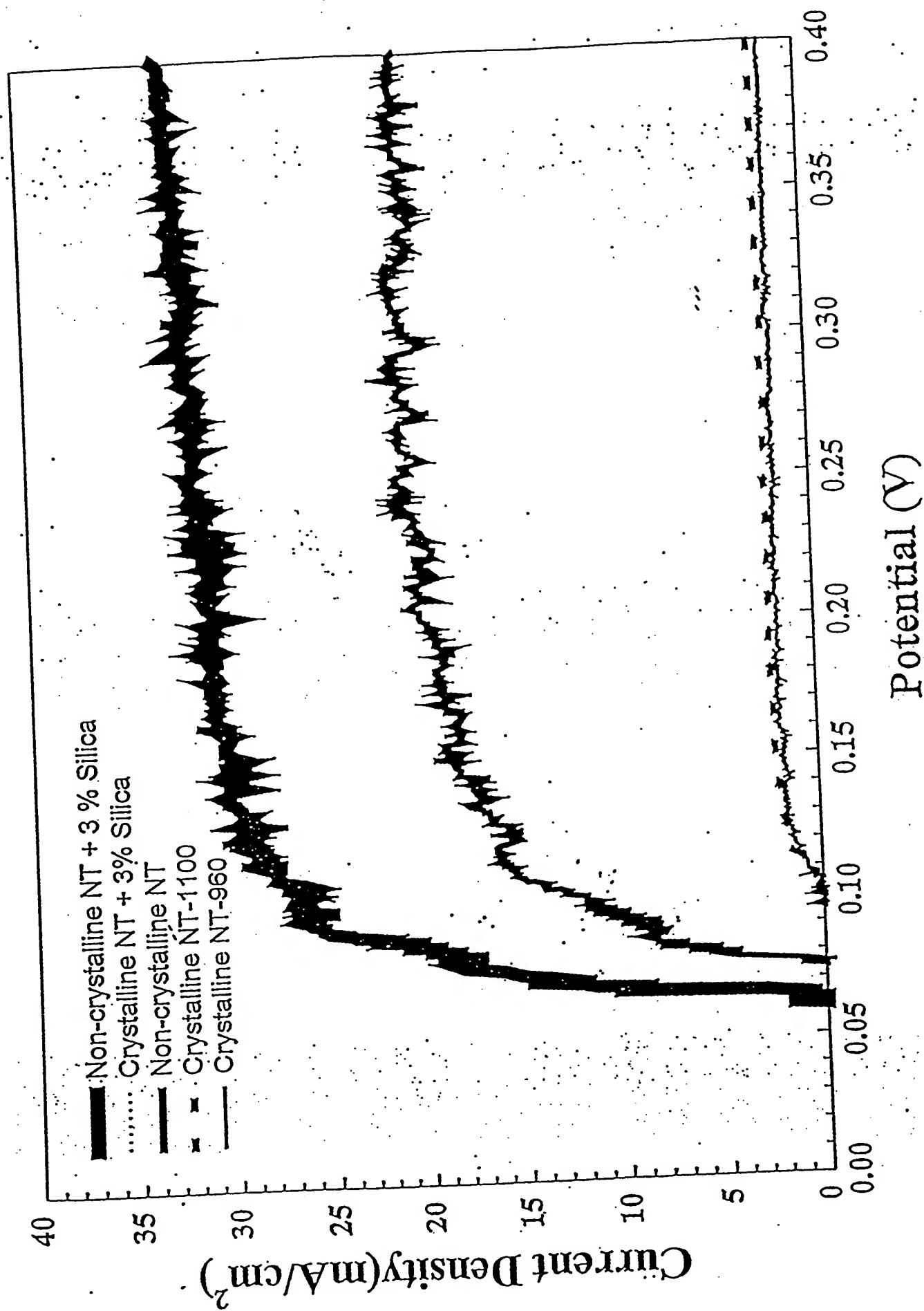
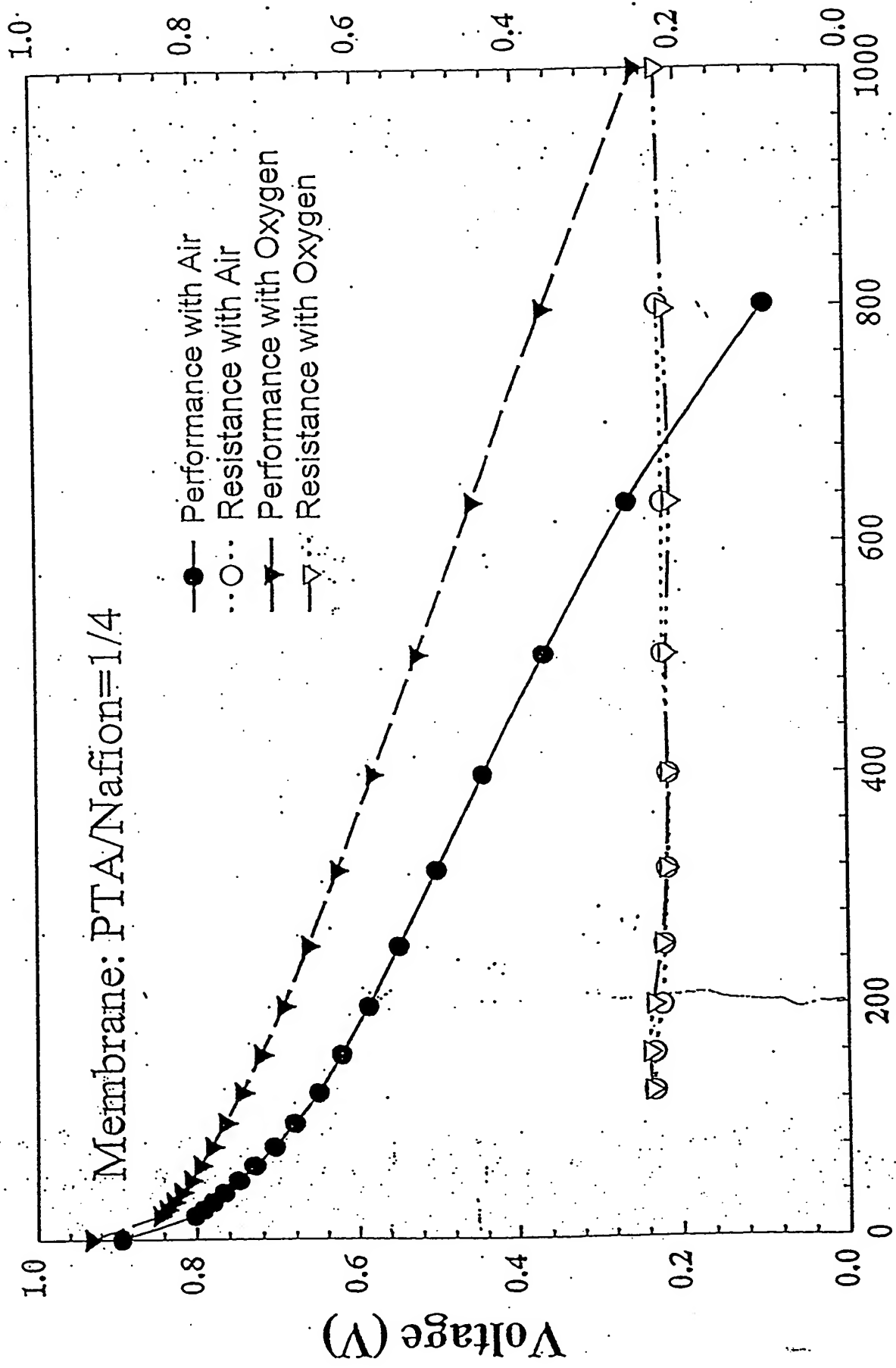


Fig. 2

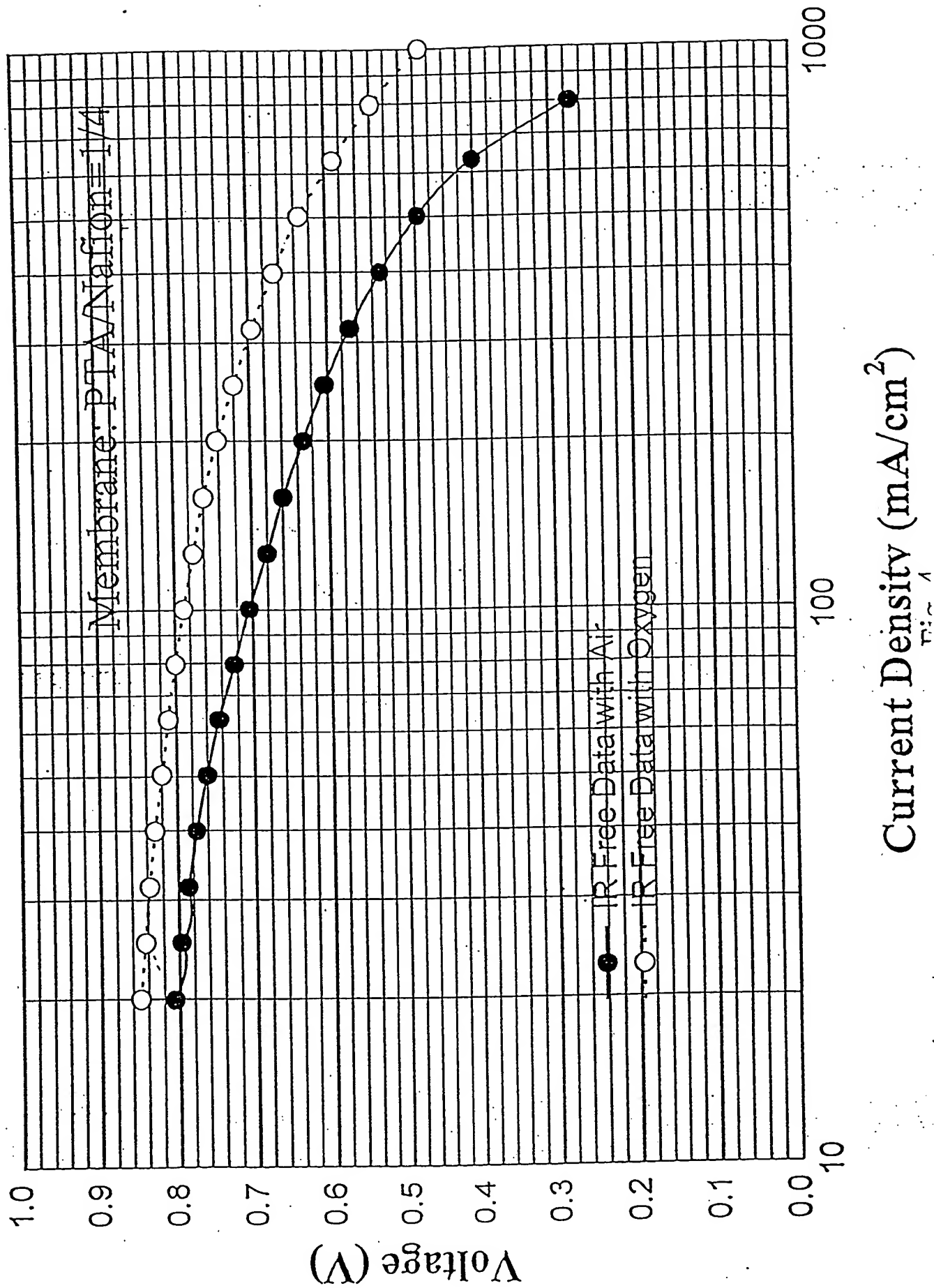
thickness: 0.7 mil; Pt black+ 40% Pt/C; 45% Pt-Ru/C; anode: 3.4 stoich hydrogen at 90 °C; cathode: air or oxygen at 84 °C



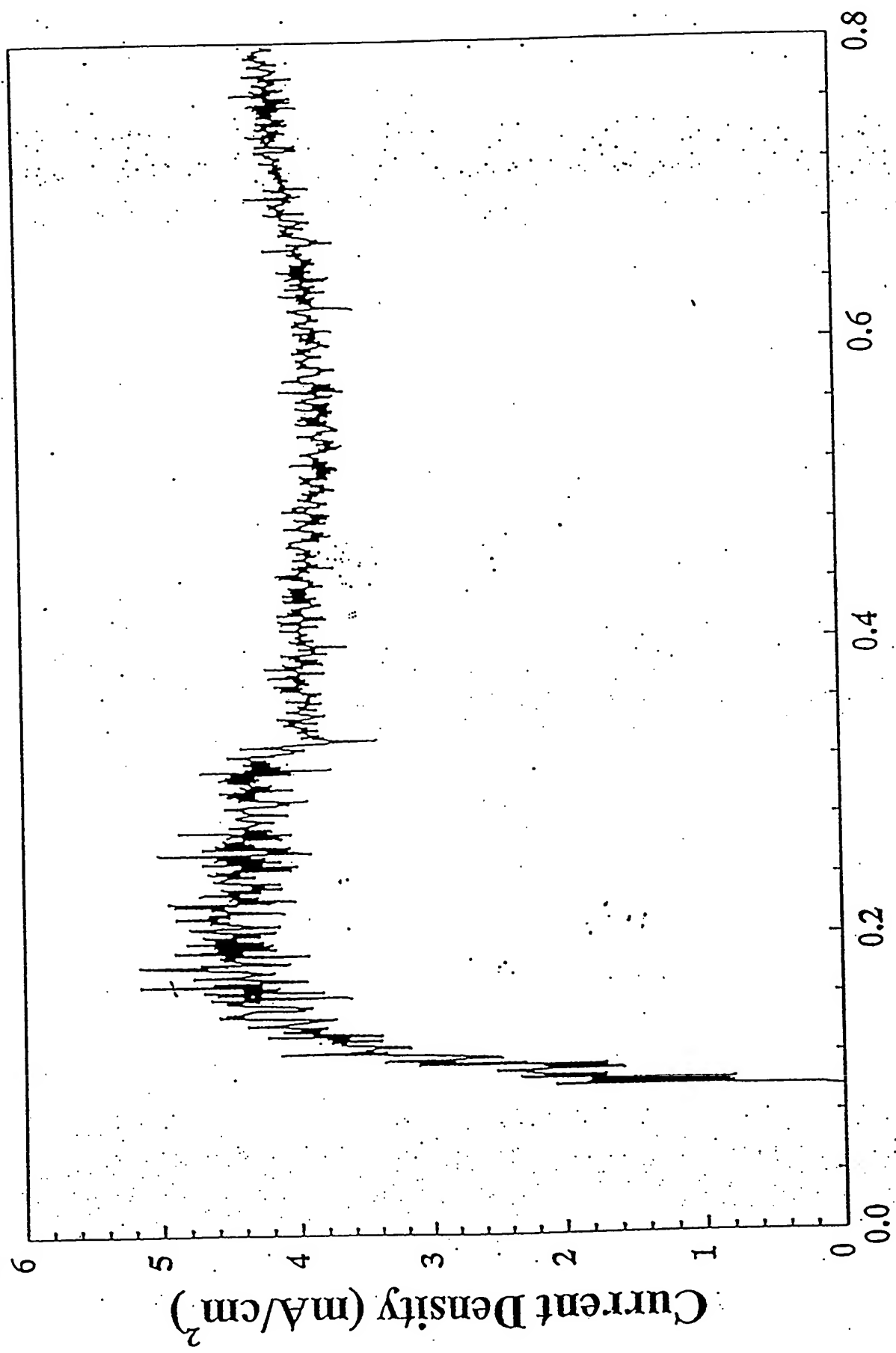
Current Density (mA/cm²)

Fig. 3

IR Free Data with a PtRu catalyst with a PtRu catalyst at 140 °C (membrane thickness: 0.7 mil; Pt black+ 40% Pt/C; 45% Pt-Ru/C; anode: 3.4 stoich hydrogen at 90 °C; cathode: air or oxygen at 84 °C)



Hydrogen Crossover Current of NTPA MEA at 110 °C
(anode humidifier temp: 90 °C; cathode humidifier temp: 84 °C)



Potential (V)

Performance of MEA-A at 120 °C (anode: 3.4 stoich hydrogen
at 90 °C; cathode: 4 stoich air at 83 °C)

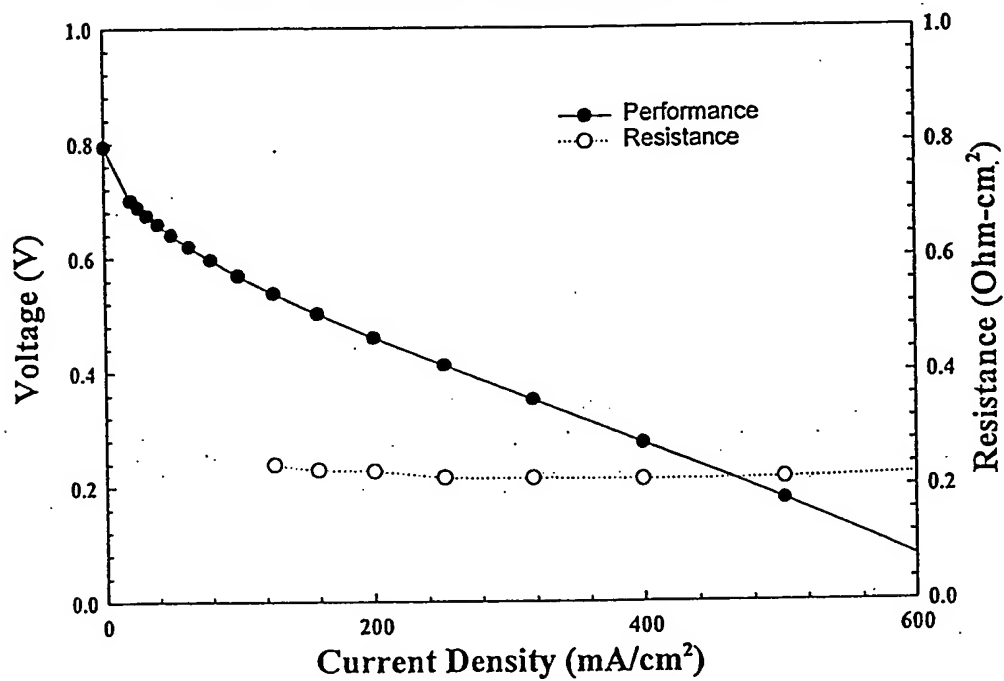


Fig. 6.

Performance of MEA-S at 120°C (anode: 3.4 stoich hydrogen
at 90°C; cathode: 4 stoich air at 84°C)

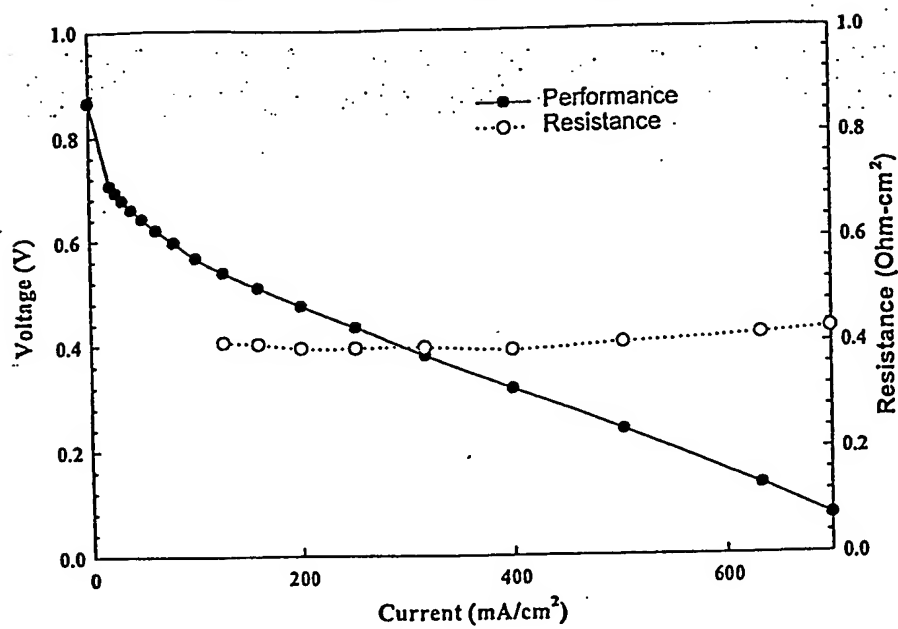


Fig. 7